



SEQUENCE LISTING

<110> GILL, PARKASH S.

<120> NOVEL INHIBITORS OF ANGIOGENESIS AND TUMOR GROWTH

<130> 13761-7011

<140> 09/743,684

<141> 2001-04-23

<150> PCT/US99/15772

<151> 1999-07-12

<150> US 60/092,647

<151> 1998-07-13

<160> 59

<170> PatentIn 2.1

<210> 1

<211> 524

<212> PRT

<213> Homo sapiens

<220>

<223> prosaposin

<220>

<221> PEPTIDE

<222> (195)..(275)

<223> Saposin B

<400> 1

Met Tyr Ala Leu Phe Leu Leu Ala Ser Leu Leu Gly Ala Ala Leu Ala
1 5 10 15

Gly Pro Val Leu Gly Leu Lys Glu Cys Thr Arg Gly Ser Ala Val Trp
20 25 30

Cys Gln Asn Val Lys Thr Ala Ser Asp Cys Gly Ala Val Lys His Cys
35 40 45

Leu Gln Thr Val Trp Asn Lys Pro Thr Val Lys Ser Leu Pro Cys Asp
50 55 60

Ile Cys Lys Asp Val Val Thr Ala Ala Gly Asp Met Leu Lys Asp Asn
65 70 75 80

Ala Thr Glu Glu Glu Ile Leu Val Tyr Leu Glu Lys Thr Cys Asp Trp
85 90 95

Leu Pro Lys Pro Asn Met Ser Ala Ser Cys Lys Glu Ile Val Asp Ser
100 105 110

Tyr Leu Pro Val Ile Leu Asp Ile Ile Lys Gly Glu Met Ser Arg Pro
115 120 125

Gly Glu Val Cys Ser Ala Leu Asn Leu Cys Glu Ser Leu Gln Lys His
 130 135 140
 Leu Ala Glu Leu Asn His Gln Lys Gln Leu Glu Ser Asn Lys Ile Pro
 145 150 155 160
 Glu Leu Asp Met Thr Glu Val Val Ala Pro Phe Met Ala Asn Ile Pro
 165 170 175
 Leu Leu Leu Tyr Pro Gln Asp Gly Pro Arg Ser Lys Pro Gln Pro Lys
 180 185 190
 Asp Asn Gly Asp Val Cys Gln Asp Cys Ile Gln Met Val Thr Asp Ile
 195 200 205
 Gln Thr Ala Val Arg Thr Asn Ser Thr Phe Val Gln Ala Leu Val Glu
 210 215 220
 His Val Lys Glu Glu Cys Asp Arg Leu Gly Pro Gly Met Ala Asp Ile
 225 230 235 240
 Cys Lys Asn Tyr Ile Ser Gln Tyr Ser Glu Ile Ala Ile Gln Met Met
 245 250 255
 Met His Met Gln Pro Lys Glu Ile Cys Ala Leu Val Gly Phe Cys Asp
 260 265 270
 Glu Val Lys Glu Met Pro Met Gln Thr Leu Val Pro Ala Lys Val Ala
 275 280 285
 Ser Lys Asn Val Ile Pro Ala Leu Glu Leu Val Glu Pro Ile Lys Lys
 290 295 300
 His Glu Val Pro Ala Lys Ser Asp Val Tyr Cys Glu Val Cys Glu Phe
 305 310 315 320
 Leu Val Lys Glu Val Thr Lys Leu Ile Asp Asn Asn Lys Thr Glu Lys
 325 330 335
 Glu Ile Leu Asp Ala Phe Asp Lys Met Cys Ser Lys Leu Pro Lys Ser
 340 345 350
 Leu Ser Glu Glu Cys Gln Glu Val Val Asp Thr Tyr Gly Ser Ser Ile
 355 360 365
 Leu Ser Ile Leu Leu Glu Glu Val Ser Pro Glu Leu Val Cys Ser Met
 370 375 380
 Leu His Leu Cys Ser Gly Thr Arg Leu Pro Ala Leu Thr Val His Val
 385 390 395 400
 Thr Gln Pro Lys Asp Gly Gly Phe Cys Glu Val Cys Lys Lys Leu Val
 405 410 415
 Gly Tyr Leu Asp Arg Asn Leu Glu Lys Asn Ser Thr Lys Gln Glu Ile
 420 425 430

A7

Leu Ala Ala Leu Glu Lys Gly Cys Ser Phe Leu Pro Asp Pro Tyr Gln
 435 440 445
 Lys Gln Cys Asp Gln Phe Val Ala Glu Tyr Glu Pro Val Leu Ile Glu
 450 455 460
 Ile Leu Val Glu Val Met Asp Pro Ser Phe Val Cys Leu Lys Ile Gly
 465 470 475 480
 Ala Cys Pro Ser Ala His Lys Pro Leu Leu Gly Thr Glu Lys Cys Ile
 485 490 495
 Trp Gly Pro Ser Tyr Trp Cys Gln Asn Thr Glu Thr Ala Ala Gln Cys
 500 505 510
 Asn Ala Val Glu His Cys Lys Arg His Val Trp Asn
 515 520

<210> 2
 <211> 81
 <212> PRT
 <213> Homo sapiens

<220>
 <223> Saposin B

<400> 2
 Gly Asp Val Cys Gln Asp Cys Ile Gln Met Val Thr Asp Ile Gln Thr
 1 5 10 15
 Ala Val Arg Thr Asn Ser Thr Phe Val Gln Ala Leu Val Glu His Val
 20 25 30
 Lys Glu Glu Cys Asp Arg Leu Gly Pro Gly Met Ala Asp Ile Cys Lys
 35 40 45
 Asn Tyr Ile Ser Gln Tyr Ser Glu Ile Ala Ile Gln Met Met Met His
 50 55 60
 Met Gln Pro Lys Glu Ile Cys Ala Leu Val Gly Phe Cys Asp Glu Val
 65 70 75 80

Lys

<210> 3
 <211> 33
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: 5' primer for
 amplifying Saposin B cDNA

<400> 3
 attcgaattc aaggggacgt ttgccaggac tgc

<210> 4
 <211> 33
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: 3' primer for
 amplifying Saposin B cDNA

<400> 4
 ttctgtgatg aggtgaaata gctcgagctc gag 33

<210> 5
 <211> 36
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: 5' primer for
 PCR amplification of Prosaposin

<400> 5
 ctagatctag aaatgtacgc cctcttcctc ctggcc 36

<210> 6
 <211> 36
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: 3' primer for
 PCR amplification of Prosaposin

<400> 6
 ctcgagctcg agctagttcc acacatggcg tttgca 36

<210> 7
 <211> 33
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: 5' primer for
 PCR amplification of Saposin A

<400> 7
 ctagatctag aatcccttcc ctgcgacata tcc 33

<210> 8
 <211> 36
 <212> DNA
 <213> Artificial Sequence

A7

<220>
 <223> Description of Artificial Sequence: 3' primer for
 PCR amplification of Saposin A

 <400> 8
 ctcgagctcg agtcacttct ggagagactc gcagag 36

 <210> 9
 <211> 33
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: 5' primer for
 PCR amplification of Saposin C

 <400> 9
 ctagatctag aatctgatgt ttactgtgag gtg 33

 <210> 10
 <211> 36
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: 3' primer for
 PCR amplification of Saposin C

 <400> 10
 ctcgagctcg agtcatgccca gagcagaggt gcagca 36

 <210> 11
 <211> 33
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: 5' primer for
 PCR amplification of Saposin D

 <400> 11
 ctagatctag aagacggtgg cttctgcgaa gtg 33

 <210> 12
 <211> 36
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: 3' primer for
 PCR amplification of Saposin D

 <400> 12
 ctcgagctcg agtcacttat gggccgaggg gcaggc 36

A7

<210> 13
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: anti-angiogenic
 polypeptide

<400> 13
 Gln Pro Lys Asp Asn Gly Asp Val Cys Gln Asp Cys Ile Gln Val
 1 5 10 15

<210> 14
 <211> 17
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: anti-angiogenic
 polypeptide

<400> 14
 Ile Gln Met Val Thr Asp Ile Gln Thr Ala Val Arg Thr Asn Ser Thr
 1 5 10 15

Phe

<210> 15
 <211> 17
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: S23-R39
 anti-angiogenic polypeptide

<400> 15
 Ser Thr Phe Val Gln Ala Leu Val Glu His Val Lys Glu Glu Cys Asp
 1 5 10 15

Arg

<210> 16
 <211> 14
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: anti-angiogenic
 polypeptide

A7

<400> 16

Cys Asp Arg Leu Gly Pro Gly Met Ala Asp Lys Asn Tyr Ser
 1 5 10

<210> 17

<211> 18

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Y51-P68
 anti-angiogenic polypeptide

<400> 17

Tyr Ile Ser Gln Tyr Ser Glu Ile Ala Ile Gln Met Met Met His Met
 1 5 10 15

Gln Pro

<210> 18

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: anti-angiogenic
 polypeptide

<400> 18

Gln Met Met Met His Met Gln Pro Lys Glu Ile Cys Ala Leu Val Gly
 1 5 10 15

<210> 19

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: G1-V11
 anti-angiogenic polypeptide

<400> 19

Gly Asp Val Cys Gln Asp Cys Ile Gln Met Val
 1 5 10

<210> 20

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: G1-(S4, S7)-V11
 anti-angiogenic polypeptide

A7

<400> 20
 Gly Asp Val Ser Gln Asp Ser Ile Gln Met Val
 1 5 10

<210> 21
 <211> 10
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: D2-V11
 anti-angiogenic polypeptide

<400> 21
 Asp Val Cys Gln Asp Cys Ile Gln Met Val
 1 5 10

<210> 22
 <211> 5
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: G1-Q5
 anti-angiogenic polypeptide

<400> 22
 Gly Asp Val Cys Gln
 1 5

<210> 23
 <211> 6
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: D6-V12
 anti-angiogenic polypeptide

<400> 23
 Asp Cys Ile Gln Met Val
 1 5

<210> 24
 <211> 9
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: D2-M10
 anti-angiogenic polypeptide

A7

<400> 24

Asp Val Cys Gln Asp Cys Ile Gln Met
1 5

<210> 25

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: D2-Q9
anti-angiogenic polypeptide

<400> 25

Asp Val Cys Gln Asp Cys Ile Gln
1 5

<210> 26

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: D2-I8
anti-angiogenic polypeptide

<400> 26

Asp Val Cys Gln Asp Cys Ile
1 5

<210> 27

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: D2-C7
anti-angiogenic polypeptide

<400> 27

Asp Val Cys Gln Asp Cys
1 5

<210> 28

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: D2-D6
anti-angiogenic polypeptide

A7

<400> 28

Asp Val Cys Gln Asp
1 5

<210> 29

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: V3-V11
anti-angiogenic polypeptide

<400> 29

Val Cys Gln Asp Cys Ile Gln Met Val
1 5

<210> 30

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: C4-V11
anti-angiogenic polypeptide

<400> 30

Cys Gln Asp Cys Ile Gln Met Val
1 5

<210> 31

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Q5-V11
anti-angiogenic polypeptide

<400> 31

Gln Asp Cys Ile Gln Met Val
1 5

<210> 32

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: G1-(S4)-V11
anti-angiogenic polypeptide

A7

<400> 32
 Gly Asp Val Ser Gln Asp Cys Ile Gln Met Val
 1 5 10

<210> 33
 <211> 11
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: G1-(S7)-V11
 anti-angiogenic polypeptide

<400> 33
 Gly Asp Val Cys Gln Asp Ser Ile Gln Met Val
 1 5 10

<210> 34
 <211> 6
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: G1-(S4)-D6
 anti-angiogenic polypeptide

<400> 34
 Gly Asp Val Ser Gln Asp
 1 5

<210> 35
 <211> 5
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: D2-(A3)-D6
 anti-angiogenic polypeptide

<400> 35
 Asp Ala Cys Gln Asp
 1 5

<210> 36
 <211> 5
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: D2-(I3)-D6
 anti-angiogenic polypeptide

A7

<400> 36

Asp Ile Cys Gln Asp
1 5

<210> 37

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: D2-(L3)-D6
anti-angiogenic polypeptide

<400> 37

Asp Leu Cys Gln Asp
1 5

<210> 38

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: D2-(S5)-D6
anti-angiogenic polypeptide

<400> 38

Asp Val Cys Ser Asp
1 5

<210> 39

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: D2-(E5)-D6
anti-angiogenic polypeptide

<400> 39

Asp Val Cys Glu Asp
1 5

<210> 40

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: D2-(D5)-D6
anti-angiogenic polypeptide

<400> 40
 Asp Val Cys Asp Asp
 1 5

<210> 41
 <211> 16
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Q67-E80
 anti-angiogenic polypeptide

<400> 41
 Gln Pro Lys Glu Ile Cys Ala Leu Val Gly Phe Cys Asp Glu Val Lys
 1 5 10 15

<210> 42
 <211> 17
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: C37-S53
 anti-angiogenic polypeptide

<400> 42
 Cys Asp Arg Leu Gly Pro Gly Met Ala Lys Ile Cys Lys Asn Tyr Ile
 1 5 10 15

Ser

<210> 43
 <211> 16
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Q9-F15
 anti-angiogenic polypeptide

<400> 43
 Gln Met Val Thr Asp Ile Gln Thr Gln Val Arg Thr Asn Ser Thr Phe
 1 5 10 15

<210> 44
 <211> 70
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: anti-angiogenic
 polypeptide

A7

<220>
 <221> MOD_RES
 <222> (1)..(6)
 <223> Xaa = any amino acid, Xaa at positions 1-6 may be present or absent

<220>
 <221> MOD_RES
 <222> (12)..(70)
 <223> Xaa = any amino acid, Xaa at positions 12-70 may be present or absent

<400> 44
 Xaa Xaa Xaa Xaa Xaa Xaa Asp Val Cys Gln Asp Xaa Xaa Xaa Xaa Xaa
 1 5 10 15
 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 20 25 30
 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 35 40 45
 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 50 55 60
 Xaa Xaa Xaa Xaa Xaa Xaa
 65 70

<210> 45
 <211> 70
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: anti-angiogenic polypeptide

<220>
 <221> MOD_RES
 <222> (1)..(5)
 <223> Xaa = any amino acid, Xaa at positions 1-5 may range from 1-5 residues

<220>
 <221> MOD_RES
 <222> (6)
 <223> Xaa = Gly, Ala, Ser or Thr

<220>
 <221> MOD_RES
 <222> (12)..(70)
 <223> Xaa = any amino acid, Xaa at positions 12-70 may be present or absent

<400> 45
 Xaa Xaa Xaa Xaa Xaa Xaa Asp Val Cys Gln Asp Xaa Xaa Xaa Xaa Xaa
 1 5 10 15

A7

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 20 25 30
 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 35 40 45
 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 50 55 60
 Xaa Xaa Xaa Xaa Xaa Xaa
 65 70

<210> 46
 <211> 70
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: anti-angiogenic
 polypeptide

<220>
 <221> MOD_RES
 <222> (6)
 <223> Xaa = variable amino acid

<220>
 <221> MOD_RES
 <222> (12)..(70)
 <223> Xaa = any amino acid, Xaa at positions 12-70 may
 be present or absent

<400> 46
 Gln Pro Lys Asp Asn Xaa Asp Val Cys Gln Asp Xaa Xaa Xaa Xaa Xaa
 1 5 10 15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 20 25 30

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 35 40 45

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 50 55 60

Xaa Xaa Xaa Xaa Xaa Xaa
 65 70

<210> 47
 <211> 16
 <212> PRT
 <213> Artificial Sequence

A7

<220>
 <223> Description of Artificial Sequence: anti-angiogenic polypeptide

<220>
 <221> MOD_RES
 <222> (1)..(6)
 <223> Xaa = any amino acid, Xaa at positions 1-6 may be present or absent

<220>
 <221> MOD_RES
 <222> (12)
 <223> Xaa = any amino acid

<220>
 <221> MOD_RES
 <222> (13)..(16)
 <223> Xaa = any amino acid, Xaa at positions 13-16 may be present or absent

<400> 47
 Xaa Xaa Xaa Xaa Xaa Xaa Asp Val Cys Gln Asp Xaa Xaa Xaa Xaa Xaa
 1 5 10 15

<210> 48
 <211> 16
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: anti-angiogenic polypeptide

<220>
 <221> MOD_RES
 <222> (1)..(6)
 <223> Xaa = any amino acid, Xaa at positions 1-6 may be present or absent

<400> 48
 Xaa Xaa Xaa Xaa Xaa Xaa Asp Val Cys Gln Asp Cys Ile Gln Met Val
 1 5 10 15

<210> 49
 <211> 70
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: anti-angiogenic polypeptide

A7

<220>
 <221> MOD_RES
 <222> (2)..(5)
 <223> Xaa = any amino acid

<220>
 <221> MOD_RES
 <222> (6)
 <223> Xaa = Gly, Ala, Ser or Thr

<220>
 <221> MOD_RES
 <222> (12)..(70)
 <223> Xaa = any amino acid, Xaa at positions 12-70 may
 be present or absent

<400> 49
 Gln Xaa Xaa Xaa Xaa Xaa Asp Val Cys Gln Asp Xaa Xaa Xaa Xaa Xaa
 1 5 10 15
 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 20 25 30
 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 35 40 45
 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 50 55 60
 Xaa Xaa Xaa Xaa Xaa Xaa
 65 70

<210> 50
 <211> 70
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: anti-angiogenic
 polypeptide

<220>
 <221> MOD_RES
 <222> (1)
 <223> Xaa = any amino acid, Xaa at position 1 may be
 present or absent

<220>
 <221> MOD_RES
 <222> (3)..(5)
 <223> Xaa = any amino acid

<220>
 <221> MOD_RES
 <222> (6)
 <223> Xaa = Gly, Ala, Ser or Thr

<220>
 <221> MOD_RES
 <222> (12)..(70)
 <223> Xaa = any amino acid, Xaa at positions 12-70 may
 be present or absent

<400> 50
 Xaa Pro Xaa Xaa Xaa Xaa Asp Val Cys Gln Asp Xaa Xaa Xaa Xaa Xaa
 1 5 10 15
 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 20 25 30
 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 35 40 45
 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 50 55 60
 Xaa Xaa Xaa Xaa Xaa Xaa
 65 70

<210> 51
 <211> 70
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: anti-angiogenic
 polypeptide

<220>
 <221> MOD_RES
 <222> (1)..(2)
 <223> Xaa = any amino acid, Xaa at positions 1 and 2 may
 be present or absent

<220>
 <221> MOD_RES
 <222> (4)..(5)
 <223> Xaa = any amino acid

<220>
 <221> MOD_RES
 <222> (6)
 <223> Xaa = Gly, Ala, Ser or Thr

<220>
 <221> MOD_RES
 <222> (12)..(70)
 <223> Xaa = any amino acid, Xaa at positions 12-70 may
 be present or absent

<400> 51
 Xaa Xaa Lys Xaa Xaa Xaa Asp Val Cys Gln Asp Xaa Xaa Xaa Xaa Xaa
 1 5 10 15

A7

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 20 25 30

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 35 40 45

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 50 55 60

Xaa Xaa Xaa Xaa Xaa Xaa
 65 70

<210> 52
 <211> 70
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: anti-angiogenic
 polypeptide

<220>
 <221> MOD_RES
 <222> (1)..(3)
 <223> Xaa = any amino acid, Xaa at positions 1-3 may be
 present or absent

<220>
 <221> MOD_RES
 <222> (5)
 <223> Xaa = any amino acid

<220>
 <221> MOD_RES
 <222> (6)
 <223> Xaa = Gly, Ala, Ser or Thr

<220>
 <221> MOD_RES
 <222> (12)..(70)
 <223> Xaa = any amino acid, Xaa at positions 12-70 may
 be present or absent

<400> 52
 Xaa Xaa Xaa Asp Xaa Xaa Asp Val Cys Gln Asp Xaa Xaa Xaa Xaa Xaa
 1 5 10 15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 20 25 30

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 35 40 45

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 50 55 60

A7

Xaa Xaa Xaa Xaa Xaa Xaa
65 70

<210> 53
<211> 70
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: anti-angiogenic
polypeptide

<220>
<221> MOD_RES
<222> (1)..(4)
<223> Xaa = any amino acid, Xaa at positions 1-4 may be
present or absent

<220>
<221> MOD_RES
<222> (6)
<223> Xaa = Gly, Ala, Ser or Thr

<220>
<221> MOD_RES
<222> (12)..(70)
<223> Xaa = any amino acid, Xaa at positions 12-70 may
be present or absent

<400> 53
Xaa Xaa Xaa Xaa Asn Xaa Asp Val Cys Gln Asp Xaa Xaa Xaa Xaa Xaa
1 5 10 15
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
20 25 30
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
35 40 45
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
50 55 60
Xaa Xaa Xaa Xaa Xaa Xaa
65 70

<210> 54
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: anti-angiogenic
polypeptide

A7

<220>
 <221> MOD_RES
 <222> (1)..(4)
 <223> Xaa = any amino acid, Xaa at positions 1-4 may be present or absent

<220>
 <221> MOD_RES
 <222> (5)
 <223> Xaa = any amino acid

<220>
 <221> MOD_RES
 <222> (6)
 <223> Xaa = Gly, Ala, Ser or Thr

<220>
 <221> MOD_RES
 <222> (12)
 <223> Xaa = any amino acid

A7
 <220>
 <221> MOD_RES
 <222> (13)..(16)
 <223> Xaa = any amino acid, Xaa at positions 13-16 may be present or absent

<400> 54
 Xaa Xaa Xaa Xaa Xaa Xaa Asp Val Cys Gln Asp Xaa Xaa Xaa Xaa Xaa
 1 5 10 15

<210> 55
 <211> 16
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: anti-angiogenic polypeptide

<220>
 <221> MOD_RES
 <222> (1)..(4)
 <223> Xaa = any amino acid, Xaa at positions 1-4 may be present or absent

<220>
 <221> MOD_RES
 <222> (5)
 <223> Xaa = any amino acid

<220>
 <221> MOD_RES
 <222> (6)
 <223> Xaa = Gly, Ala, Ser or Thr

<220>
 <221> MOD_RES
 <222> (13)..(16)
 <223> Xaa = any amino acid, Xaa at positions 13-16 may
 be present or absent

<400> 55
 Xaa Xaa Xaa Xaa Xaa Xaa Asp Val Cys Gln Asp Cys Xaa Xaa Xaa Xaa
 1 5 10 15

<210> 56
 <211> 16
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: anti-angiogenic
 polypeptide

A7
 <220>
 <221> MOD_RES
 <222> (1)..(4)
 <223> Xaa = any amino acid, Xaa at positions 1-4 may be
 present or absent

<220>
 <221> MOD_RES
 <222> (5)
 <223> Xaa = any amino acid

<220>
 <221> MOD_RES
 <222> (6)
 <223> Xaa = Gly, Ala, Ser or Thr

<220>
 <221> MOD_RES
 <222> (12)
 <223> Xaa = any amino acid

<220>
 <221> MOD_RES
 <222> (14)..(16)
 <223> Xaa = any amino acid, Xaa at positions 14-16 may
 be present or absent

<400> 56
 Xaa Xaa Xaa Xaa Xaa Xaa Asp Val Cys Gln Asp Xaa Ile Xaa Xaa Xaa
 1 5 10 15

<210> 57
 <211> 16
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: anti-angiogenic polypeptide

<220>
 <221> MOD_RES
 <222> (1)..(4)
 <223> Xaa = any amino acid, Xaa at positions 1-4 may be present or absent

<220>
 <221> MOD_RES
 <222> (5)
 <223> Xaa = any amino acid

<220>
 <221> MOD_RES
 <222> (6)
 <223> Xaa = Gly, Ala, Ser or Thr

A7
 <220>
 <221> MOD_RES
 <222> (12)..(13)
 <223> Xaa = any amino acid

<220>
 <221> MOD_RES
 <222> (15)..(16)
 <223> Xaa = any amino acid, Xaa at positions 15 and 16 may be present or absent

<400> 57
 Xaa Xaa Xaa Xaa Xaa Asp Val Cys Gln Asp Xaa Xaa Gln Xaa Xaa
 1 5 10 15

<210> 58
 <211> 16
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: anti-angiogenic polypeptide

<220>
 <221> MOD_RES
 <222> (1)..(4)
 <223> Xaa = any amino acid, Xaa at positions 1-4 may be present or absent

<220>
 <221> MOD_RES
 <222> (5)
 <223> Xaa = any amino acid

<400> 58
Xaa Xaa Xaa Xaa Xaa Xaa Asp Val Cys Gln Asp Xaa Xaa Xaa Met Xaa
1 5 10 15

```
<210> 59
<211> 16
<212> PRT
<213> Artificial Sequence
```

<220>
<223> Description of Artificial Sequence: anti-angiogenic polypeptide

```
<220>
<221> MOD_RES
<222> (1)..(4)
<223> Xaa = any amino acid, Xaa at positions 1-4 may be
      present or absent
```

```
<220>
<221> MOD_RES
<222> (5)
<223> Xaa = any amino acid
```

```
<220>
<221> MOD_RES
<222> (6)
<223> Xaa = Gly, Ala, Ser or Thr
```

```

<220>
<221> MOD_RES
<222> (12)..(15)
<223> Xaa = any amino acid

```

<400> 59
Xaa Xaa Xaa Xaa Xaa Xaa Asp Val Cys Gln Asp Xaa Xaa Xaa Xaa Val
1 5 10 15